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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,762	04/16/2004	Andrew W. Hobgood	18349-00042	8788

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EXAMINER
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DINH, DUC Q

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/825,762	<b>Applicant(s)</b> HOBGOOD ET AL.	
	<b>Examiner</b> DUC Q. DINH	<b>Art Unit</b> 2674	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-14 recites the limitation "the three dimension space" in line 8. There is insufficient antecedent basis for this limitation in the claim. Similarity, there is no antecedent for the limitation "the camera electronics" in claims 2, 3, 4, Due to the 112 rejection, the examiner examines the application as best understanding of the claimed language.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "camera electronics" in claims 4, 13 and "an electronic imaging element" in claim 9 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the

Art Unit: 2674

renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

4. Claim 1 is objected to because of the following informalities: "and" in line 3 should read "an". Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6 and 11 are rejected under 35 U.S.C. 102(b) as being anticipate by Ellenby et al. (U.S Patent No. 5,815,411), hereinafter Ellenby.

In reference to claim 1, Ellenby discloses a method for using advanced image information to increase the quality of an Augmented Reality image comprising the image from a camera combined with a computer-generated graphics to create an AR display (col. 4, lines 15-28), the method comprising:

capturing an image or view of the real world with a camera having a lens (light from a scene is imaged by a lens; col. 5, line 24-25);

Art Unit: 2674

obtaining one or more imaging parameters of the camera and camera lens (col. 11, lines 1-10);

detecting the position and orientation of the camera (col. 5, lines 26-32);

using a computer to render a graphical image representing one or more objects located in the three dimensional space , (col. 13, lines 50-55); and rendering said objects such that they are visually consistent with the obtained image parameters, position and orientation (col. 5, lines 32-33 and col. 11, lines 1-10);

augmented the image or view of the real world with the computer generated image (col. 10, lines (col. 10, lines 44-54);

render the augmented imaged or view to the user (col. 5, lines 35-36).

In reference to claims 2 and 4, Ellenby discloses the imaging parameters are provided by the camera electronics via communication to the computer (see Fig. 4, col. 10, line 67 – col. 11, line 10; lens zoom operation can also be power driven and controlled manually by the user at an electronic control switch).

In reference to claim 3, Ellenby discloses imaging parameters are obtained by one or more sensor attached to the camera (motion information from sensitive gyros 35 could detect movements and provide a driving signal to the prisms (Fig. 5, col. 11, lines 15-16).

In reference to claim 5, Ellenby discloses the imaging parameters include field of view (the physical dimensions of the input lens define the field of view of the device which is variable with the zoom properties of the lens. Information regarding the field of view can be supplied to the processor to be used in image combination routines; col. 11, lines 5-10).

Art Unit: 2674

In reference to claim 6, Ellenby discloses the imaging parameters include focus (col. 12, lines 65-67).

In reference to claim 11, Ellenby discloses at least one imaging parameter is fixed and known prior capturing image, and at least one imaging parameter is variable and obtained as it varies (lens zoom operations can also be power driven and controlled manually by the user at an electronic control switch, or could be driven by the computer based on known features particular to a chosen scene, i.e.: prior capturing the image. The physical dimensions of the input lens define the field of view of the device which is variable, i.e.: imaging parameter is variable and obtained as it varies, with the zoom properties of the lens).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 10, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellenby in view of Masunaga et al. (U.S Patent No 5,838,368), hereinafter Masunaga.

In reference to claims 12 and 15, refer to the rejection as applied to claim 1. Accordingly, Ellenby discloses everything except the determining position and orientation of the camera comprises using a motorized camera mount to provide the orientation of the camera, in conjunction with a previously determined position of the mount. Masunaga disclose a camera system using a motorized camera mount (camera electronics) to provide the orientation of the camera and using sensors 434, and 428 (sensor attached to the camera or camera lens for

Art Unit: 2674

obtaining one or more imaging parameters of the camera and camera lens, the imaging parameters are provided by a combination of the camera electronic, i.e.: the motorized camera mount and the sensors 434 and 428) to detect the orientation of the camera in conjunction with a previous determined position of the mounting base 406.

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the motorized camera mount in the system of Ellenby because it would provide a camera system capable of controlling each of the panning, tilting and zooming control elements to individually shift the position of the video camera to a preset position at a high speed as taught by Masaguna (col. 25, lines 9-13).

In reference to claim 10, Ellenby does not disclose the imaging parameter including measurement of the light level in the image as seen by the camera. Masaguna teaches a image level detector 40 in Fig. 2 for measuring the light level in the image as seen by the camera as claimed.

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the image level detector 24 in the display system of Ellenby to change the level of the of the display image to an adequate level as taught by Masaguna (col. 5, lines 5-10 of Masaguna).

9. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellenby in view of the Applicant Admitted Prior Art, hereinafter AAPA (page 8, lines 5-9).

In reference to claims 13-14, Ellenby does not disclose the determining step comprising using an independent 3DOF or 6DOF tracking system to determining the orientation of the camera. The AAPA discloses 3DOF or 6DOF tracking system system is used and well known.

Art Unit: 2674

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the 3DOF or 6DOF tracking system in the system of Ellenby to determine the position and location of the camera in view of the teaching of the AAPA.

10. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellenby in view of Bolle et al. (U.S Patent No. 6,301,440), hereinafter Bolle.

In reference to claims 7-9, Ellenby does not disclose the imaging parameters include aperture, exposure time, light sensitive setting for an electronic imaging element. Bolle discloses list of imaging parameters using for a video camera having aperture, exposure time (shutter speed) and light sensitive setting for an electronic imaging element as claimed.

It would have been obvious for one of ordinary skill in the art at the time of the invention provide the parameters for aperture, exposure time and light sensitive setting for an electronic imaging element in the display system of Ellenby in view of the teaching of Bolle because it would provide a highly sophisticated electronic cameras, which either automatically sets camera parameters at optimal settings and/or which gives the user the ability to set those parameters in an easy and efficient manner as compared with conventional devices (col. 2, lines 5-10).

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUC Q DINH whose telephone number is (571) 272-7686. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.




Art Unit: 2674

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edouard Patrick can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DUC Q DINH  
Examiner  
Art Unit 2674

  
PATRICK N. EDOUARD  
SUPERVISORY PATENT EXAMINER

DQD  
September 23, 2005